

Application No. 10/708,054

Docket No.: 60680-1812

**AMENDMENTS TO THE CLAIMS**

1. (Original) A method of manufacturing a bipolar plate module comprising an anode plate, a cathode plate, and a membrane electrode assembly (MEA) disposed between the anode plate and the cathode plate, the method steps comprising the steps of:

placing the anode plate, the cathode plate and the MEA within a mold;

injecting a sealing material into the mold, whereby the seal material fills grooves formed on the anode or cathode plates to form an insulation layer, the material flows through through-holes formed in the grooves of either the anode plate or the cathode plate to form a sealing layer between the plates and to form an edge seal about a portion of the MEA; and

curing the sealing material to bind the anode plate to the cathode plate, thereby forming a bipolar plate module.

2. (Original) A method of manufacturing a bipolar plate module according to Claim 1, wherein the sealing material comprises a silicone material.

3. (Original) A method of manufacturing a bipolar plate module according to Claim 1, wherein the sealing material is epoxy nitrile.

4. (Original) A method of manufacturing a bipolar plate module according to Claim 1, wherein the pressure for injecting the sealing material is between about 300-700 lb/in<sup>2</sup>.

5. (Original) A method of manufacturing a bipolar plate module according to Claim 1, wherein said temperature of the sealing material when injected into the mold is between about 75-400 degrees Fahrenheit.

6. (Original) A method of manufacturing a bipolar plate module according to Claim 1, wherein said curing step includes applying pressure to the anode and cathode plates.

7. (Original) A method of manufacturing a bipolar plate module comprising an

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anode plate, a cathode plate, and a membrane electrode assembly (MEA) disposed between the anode plate and the cathode plate, the method comprising the steps of:

screen printing a sealing material upon one of a anode plate and a cathode plate;  
positioning the MEA upon one of the anode plate and the cathode plate;  
placing the other one of the anode plate and cathode plate upon the MEA;  
curing the sealing material to form a sealing layer between the anode and cathode plates and to form an edge seal about a portion of the MEA, thereby binding the anode plate to the cathode plate to form a bipolar plate module.

8. (Original) A method of manufacturing a bipolar plate module according to Claim 7, wherein the sealing material is deposited upon a perimeter of the anode or cathode plate.

9. (Original) A method of manufacturing a bipolar plate module according to Claim 7, wherein the sealing material comprises a silicone material.

10. (Original) A method of manufacturing a bipolar plate module according to Claim 7, wherein the sealing material is epoxy nitrile.

11. (Original) A method of manufacturing a bipolar plate module according to Claim 7, wherein the step of positioning the MEA upon one of the anode plate and the cathode plate is performed before said screen-printing step.

12. (Original) A method of manufacturing a bipolar plate module according to Claim 7, further including the step of forming an insulation layer between two bipolar plate modules.

13. (Original) A method of manufacturing a bipolar plate module according to Claim 12, wherein the sealing material fills grooves formed on the anode plate and cathode plate to form the insulation layer.

14. (Original) A method of manufacturing a bipolar plate module according to Claim 7, wherein said curing step includes applying pressure to the anode and cathode plates.